

### REMARKS

The present invention represents improvements in efficiently generating energy from falling water. A cylindrical frame is adopted to receive a directional introduction of falling water at an upper end and has a discharge port at its lower end. A conveyor is circulatably provided within this cylindrical frame and capable of rotating a shaft that can extend for providing power to a generator that is positioned on the exterior of the cylindrical frame, and thereby isolated from the water.

A plurality of buckets are disposed on the conveyor into which the falling water can be introduced and thereby drive the conveyor for rotating the shaft. The falling water can be introduced on one side of the conveyor and guide plates can extend outward from the buckets in a direction away from the conveyor, whereby the impact of the falling water can contribute to the rotational energy generated by the rotary shaft for the generator. The guide plates can further direct the water towards the buckets to ensure a fill state of the respective buckets for driving the conveyor.

A storage tank can be utilized to accumulate water to thereby modulate the flow of water, and a valve can be utilized to control the flow of the water and conversely the amount of generation of the electricity.

“Thus when differences that may appear technologically minor nonetheless have a practical impact, particularly in a crowded field, the decision-maker must consider the obviousness of the new structure in this light.”

*Continental Can Co. USA Inc. v. Monsanto Co.*, 20 U.S.P.Q. 2d. 1746, 1752 (Fed. Cir. 1991).

As can be seen from the prior art of record, the desire to optimize the production of energy from falling water has been a goal for a long period of time. This is, in fact, a relatively

crowded field and a person of ordinary skill would carefully scrutinize any teaching and only rely upon those teachings that could produce an operative device.

The Office Action contended that Claims 1-3, 5-6 and 9-10 would be obvious over a combination of *Liou* (U.S. Patent No. 5,905,312) in view of *Shin* (U.S. Patent No. 6,734,574).

As set forth in MPEP 2142,

To reach a proper determination under 35 U.S.C. §103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

The principal reference relied upon, *Liou*, would not be taken seriously by a person of ordinary skill in this field. Basically, the teaching in this reference is a Perpetual Motion Machine. To be operative, it would have to produce more power than is introduced into the closed loop generating system.

*Liou* teaches pumping water to an elevated tank and then using the pumped water to generate power. Purportedly this will solve a problem that exists in Taiwan where apparently there is not any significant hydropower available. Since *Liou* does not have any external energy source such as falling water from a dam or from some other source, it is basically a closed system. The pump 4 positioned within a lower tank 3 is shown in Figure 7 and is simply returning the fallen water or oil upward to the storage tank.

Assuming that the electricity generated by the falling water would be greater than the energy required to drive the pump, you would have a closed system with no external energy being introduced into the system and the system producing more energy than it utilizes by friction, inertia, heat dissipation, energy for the pump, etc. This is a definition of a perpetual motion machine.

The United States Patent Office requires a model of any alleged invention that can provide perpetual motion. See MPEP §608.03. As such, a person of ordinary skill in the field would not seriously consider the teachings of such a reference.

The Office Action took Official Notice of an equivalence of a rectangular bucket and a cylindrical bucket and further recognized the failure of the *Liou* reference to teach a cylindrical frame as defined in our claims. However, the Office Action relied on the *Shin* reference for a teaching of a cylindrical frame.

The *Shin* reference purportedly is a closed system with a buoyancy driven set of spheres or magnetic capsules that are designed to produce power by being inserted into a column of buoyant fluid such as water or oil. A series of electrical coils are mounted around a closed loop pipe system for generating power.

Note, the *Shin* like the *Liou* reference, is again a closed system that must generate more power than introduced back into the system, in order to be operative. That is, a perpetual motion machine. The *Shin* reference cites basic physics equations and math, purportedly in evaluating energy loss, the effect of the "containment loop 100" which is preferably a closed loop of pipe, Paragraph 3, Lines 60-61.

It should be noted, however, that *Shin* does not evaluate the cost in energy requirements of the capsule injector 110, shown for example in Figure 1, that introduces the buoyant magnetic

capsules from a low pressure exhaust side into the operative high pressure buoyant side of the closed loop.

As in any closed system without the continued input of external energy, it is not capable of generating more energy than it utilizes in its operation, and you have a perpetual motion machine.

Thus, like the *Liou* reference, a person of ordinary skill in this field would question the viability of combining either of these two hypothetical references.

The Office Action specifically contended that the *Shin* reference taught a "substantially vertical standing cylindrical frame (Figures F, 6A and 6B)." The Office Action contended that it would simply be obvious to a person of ordinary skill in the field to use the cylindrical shape of the capsules, coils and frame disclosed by *Shin* to modify the *Liou* reference for the purpose of allowing cylindrically shaped buckets to pass through a cylindrically shaped frame.

"When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself."

*Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985).

The *Shin* reference actually teaches, with regards to Figures 6A and 6B as follows: At Column 7, Lines 19-26:

FIG. 6(a) shows a single coil module 500. In the single coil module 500, a ferromagnetic skin 510 is located around the exterior of the coil module 500. The single coil module 500 induces an EMF through the magnetic flux internal to the capsule magnet. FIG. 6(b) shows a compound wound coil module 530. The compound wound coil module 530 utilizes a ferromagnetic core 540 and induces an EMF through the external magnetic flux.

Thus, as can be seen from the respective Figures 6(a) and 6(b), there are two versions of providing coil modules that extend external to the pipe. The coil modules are more equivalent to the generator and there is certainly no teaching of buckets in a conveyor system within a cylindrical frame as defined in our claims. The closed pipe of *Shin* simply is a guide for passing a plurality of cylindrical capsules in a pipe through a plurality of cylindrical coil modules. Additionally, *Shin* discloses a closed loop and not a cylindrical frame with a possibility of an introduction of external power such as falling water and the release of the water from the cylindrical frame.

As can be appreciated, the more that the cited references must be modified to meet the outstanding claims, the more likely that an non-intended issue of hindsight may have driven the rejection. This is particularly true for an Examiner who is attempting to provide a diligent effort to ensure that only patentable subject matter occurs. The difficult issue is to step back from the zeal of the examination process and to appreciate that a Patent Examiner has to wear both hats of advocating a position relative to the prior art, while at the same time objectively rendering in a judge-like manner, a decision on the patentability of the present claims.

It is improper to use Applicants' own disclosure as a roadmap for modifying references. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and *not based on applicant's disclosure.*" *In re Vacek*, 947 F.2d 488 (Fed. Cir. 1991); MPEP §706.02(j) (emphasis added).

The Office Action further rejected Claims 4, 7-8 and 11 over a combination of *Liou*, *Shin* and *Bradshaw* (U.S. Patent No. 1,483,505).

At least the *Bradshaw* reference is utilizing a legitimate source of external falling water to introduce energy into his system. Obviously the *Bradshaw* reference would not make up for

the deficiencies, however, of the respective *Liou* and *Shin* reference. The Office Action, however, was not citing *Bradshaw* for that purpose.

Rather, it was citing *Bradshaw* for allegedly disclosing guide plates in the same manner utilized in our present invention. More specifically, the Office Action contended that the guide plates were taught by the extended end walls 28 shown, for example in Figure 1 and Figure 7.

Please note, however, that the guide plates as defined in our claims, and as shown for example in our Figure 1, extend laterally into the falling water flow to receive energy from a kinetic velocity of the falling water.

As can be seen in Figure 1 of *Bradshaw*, the extensions 28 actually are positioned directly underneath the immediately preceding bucket and are not impacted by the falling water. The purpose of the extension 28 is to enlarge the mouth of a side open area of the bucket for receiving the horizontal direction of water from the chutes 13 and 14. It would appear that the enlargement of the bucket by extension 29 are to simulate the cylindrical configuration of the upper bucket. It is certainly not their purpose to extend into the vertically falling water for receiving impact energy.

Actually, a lower deflector plate 30, on the *Bradshaw* buckets, at least purportedly has a minor deflecting characteristic but it actually is directed to just taking an overflow of water from an upper bucket and directing it inward so that it can be dropped into a lower bucket, as seen in Figure 1.

As described on Page 2, Lines 68-85, the purpose of such deflector plate 30 is primarily for the start when empty buckets are below and the deflector plate 30 permits an overflow of water to pass down and fill the lower buckets, or at least contribute to the fill of the lower buckets, to start the momentum of the conveyor belt.

Accordingly, the *Bradshaw* reference does not teach the guide plates as defined in our current claims, and certainly does not correct the deficiency of the perpetual motion teachings of the *Liou* and *Shin* disclosure.

Claims 12-16 were rejected over a combination of the *Bradshaw* teaching in view of *Liou*.

*Bradshaw* was cited for a frame, a pair of shafts, and an endless conveyor belt. *Bradshaw* does not teach a generator, nor does it teach a funnel member, nor does it teach guide plates as mentioned above.

The *Liou* reference was cited for the teaching of a generator 60 and a funnel member. As can be readily appreciated, the *Liou* reference had previously been acknowledged not to teach a cylindrical frame. Additionally, the pipe of the *Shin* reference certainly does not represent a teaching of a substantially vertical standing cylindrical frame in the specific manner described in our claims.

Claim 17 was rejected over a combination of *Bradshaw*, *Liou* and *Trumball et al.* (U.S. Patent No. 4,100,743).

The *Trumball et al.* reference at least had an external source of power in the form of a solar boiler 30 to purportedly generate expansion heat fluid that is introduced into a closed loop system through a pipe 24. Purportedly the heat is provided to an expansion chamber and the spheroids will act as dynamic pistons within a pipe configuration that are forced to rotate upward with the medium introduced from the boiler such as steam assisting to purportedly seal and lubricate the spheroids in the expansion chamber. See Column 4, Lines 31-44. The spheroids then fall by gravity to continuously enter into pockets within a wheel 20 to rotate a shaft, by gravity that purportedly generates power from a generator.

As can be appreciated, a flat oval housing contained a U-shaped pipe that forms the cylinder walls of the valve or piston spheroids 18. Certainly this structure does not eliminate the deficiencies of either the *Liou*, *Shin* or *Bradshaw* references, and is simply cited for the concept of a generator and a storage battery.

Applicant respectfully submits that the background knowledge possessed by a person of ordinary skill in this field would recognize that it is a very crowded field with apparently legitimate and not so legitimate structures cited in the patent art. A person of ordinary skill in this field, however, would not be interested in perpetual motion machines, and would recognize that structural features are missing from any combination of these references to teach the elements set forth in our current claims.

Further, there apparently has been a use of hindsight in collecting diverse references to aggregate them in the rejection. There is no explicit analysis that would support any reason to combine features from these patents in the manner set forth in our current claims.

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

*KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41 (2007).

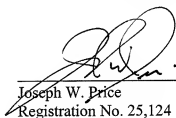
In view of the amendments to the claims and the above comments, it is believed that the case is now in condition for allowance and early notification of the same is requested.



If the Examiner believes a telephone interview will help further the prosecution of this case, the undersigned attorney can be contacted at the listed phone number.

Very truly yours,

**SNELL & WILMER L.L.P.**



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